Exploring the Extreme			
2005 Mathematics			
Grade Level and High School Content Expectations			
Michigan Mathematics			
Grade 1			
Activity/Lesson	**State**	**Standards**	
Finding the Center of Gravity Using Rulers	MI	MA.1.D.RE.01.01	Collect and organize data to use in pictographs.
Changing the Center of Gravity Using Moment Arms	MI	MA.1.D.RE.01.01	Collect and organize data to use in pictographs.
Exploring the Extreme			
2005 Mathematics			
Grade Level and High School Content Expectations			
Michigan Mathematics			
Grade 2			
Activity/Lesson	**State**	**Standards**	
Finding the Center of Gravity Using Rulers	MI	MA.2.N.ME.02.20	Place 0 and halves, e.g., 1/2, 1 1/2, 2 1/2, on the number line; relate to a ruler.
Changing the Center of Gravity Using Moment Arms	MI	MA.2.N.ME.02.20	Place 0 and halves, e.g., 1/2, 1 1/2, 2 1/2, on the number line; relate to a ruler.
Exploring the Extreme			
2005 Mathematics			
Grade Level and High School Content Expectations			
Michigan Mathematics			
Grade 3			
Activity/Lesson	**State**	**Standards**	
Finding the Center of Gravity Using Rulers	MI	MA.3.N.ME.03.18	Place fractions with denominators of 2, 4, and 8 on the number line; relate the number line to a ruler; compare and order up to three fractions with denominators 2, 4, and 8.
Exploring the Extreme			
2005 Mathematics			
Grade Level and High School Content Expectations			
Michigan Mathematics			
Grade 4			
Activity/Lesson	**State**	**Standards**	
Finding the Center of Gravity Using Rulers	MI	MA.4.M.UN.04.01	Measure using common tools and select appropriate units of measure.
Finding the Center of Gravity Using Rulers	MI	MA.4.M.PS.04.02	Give answers to a reasonable degree of precision in the context of a given problem.

Finding the Center of Gravity Using Plumb Lines	MI	MA.4.M.UN.04.01	Measure using common tools and select appropriate units of measure.
Changing the Center of Gravity Using Moment Arms	MI	MA.4.M.UN.04.01	Measure using common tools and select appropriate units of measure.
Changing the Center of Gravity Using Moment Arms	MI	MA.4.M.PS.04.02	Give answers to a reasonable degree of precision in the context of a given problem.
Changing the Center of Gravity Using Moment Arms	MI	MA.4.G.GS.04.01	Identify and draw perpendicular, parallel, and intersecting lines using a ruler and a tool or object with a square (90º) corner.
Changing the Center of Gravity Using Moment Arms	MI	MA.4.D.RE.04.01	Construct tables and bar graphs from given data.
Exploring the Extreme			
2005 Mathematics			
Grade Level and High School Content Expectations			
Michigan Mathematics			
Grade 5			
Activity/Lesson	**State**	**Standards**	
Vectoring	MI	MA.5.G.GS.05.02	Measure angles with a protractor and classify them as acute, right, obtuse, or straight.
Vectoring	MI	MA.5.G.GS.05.04	Find unknown angles in problems involving angles on a straight line, angles surrounding a point, and vertical angles.
Center of Gravity, Pitch, Yaw	MI	MA.5.N.ME.05.09	Understand percentages as parts out of 100, use % notation, and express a part of a whole as a percentage.
Fuel Efficiency	MI	MA.5.D.RE.05.01	Read and interpret line graphs, and solve problems based on line graphs, e.g., distance-time graphs, and problems with two or three line graphs on same axes, comparing different data.
Exploring the Extreme			
2005 Mathematics			
Grade Level and High School Content Expectations			
Michigan Mathematics			
Grade 6			
Activity/Lesson	**State**	**Standards**	
Center of Gravity, Pitch, Yaw	MI	MA.6.N.FL.06.12	Calculate part of a number given the percentage and the number.
Center of Gravity, Pitch, Yaw	MI	MA.6.N.MR.06.13	Solve contextual problems involving percentages such as sales taxes and tips.
Fuel Efficiency	MI	MA.6.A.RP.06.08	Understand that relationships between quantities can be suggested by graphs and tables.

Fuel Efficiency	MI	MA.6.A.FO.06.11	Relate simple linear equations with integer coefficients, e.g., 3x = 8 or x + 5 = 10, to particular contexts and solve.
Exploring the Extreme			
2005 Mathematics			
Grade Level and High School Content Expectations			
Michigan Mathematics			
Grade 7			
Activity/Lesson	**State**	**Standards**	
Center of Gravity, Pitch, Yaw	MI	MA.7.G.SR.07.01	Use a ruler and other tools to draw squares, rectangles, triangles, and parallelograms with specified dimensions.
Fuel Efficiency	MI	MA.7.A.PA.07.01	Recognize when information given in a table, graph, or formula suggests a directly proportional or linear relationship.
Fuel Efficiency	MI	MA.7.A.RP.07.02	Represent directly proportional and linear relationships using verbal descriptions, tables, graphs, and formulas, and translate among these representations.
Exploring the Extreme			
2005 Mathematics			
Grade Level and High School Content Expectations			
Michigan Mathematics			
Grade 8			
Activity/Lesson	**State**	**Standards**	
Jet Propulsion	MI	MA.8.D.AN.08.02	Recognize practices of collecting and displaying data that may bias the presentation or analysis.
Vectoring	MI	MA.8.D.AN.08.02	Recognize practices of collecting and displaying data that may bias the presentation or analysis.
Center of Gravity, Pitch, Yaw	MI	MA.8.N.FL.08.05	Estimate and solve problems with square roots and cube roots using calculators.
Fuel Efficiency	MI	MA.8.N.FL.08.05	Estimate and solve problems with square roots and cube roots using calculators.
Fuel Efficiency	MI	MA.8.A.RP.08.01	Identify and represent linear functions, quadratic functions, and other simple functions including inversely proportional relationships (y = k/x); cubics ($y = ax^3$); roots (y = the square root of x); and exponentials (y = a to the x power, a > 0); using tables, graphs, and equations.
Fuel Efficiency	MI	MA.8.A.PA.08.03	Recognize basic functions in problem context, e.g., area of a circle is pi r^2, volume of a sphere is 4/3pi r^3, and represent them using tables, graphs, and formulas.